Idaho Disease BULLETIN

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Seasonal Epidemics of Respiratory Syncytial Virus

Every winter outbreaks of respiratory syncytial virus (RSV) occur, and the timing of these seasonal outbreaks is predictable to a limited extent. Of all infants hospitalized for any cause, the leading diagnosis is RSV bronchiolitis, responsible for greater than 120,000 hospitalizations annually in the US, and these hospitalizations are concentrated in January through March. By their second birthday, virtually all children have had a respiratory illness with RSV, and half of children have had RSV twice. Immunity is short-lived, so that RSV causes upper and lower respiratory tract infection at all ages.

Measures to prevent RSV infection are limited. Infants exposed to school-age siblings or day care are much more likely to develop RSV infection. Contact precautions are used for isolation of children hospitalized with bronchiolitis. No vaccine has been successfully developed: an alum-precipitated formalin-inactivated vaccine used in clinical trials in the 1960s led to enhanced disease in vaccinated children during subsequent RSV infections. Passive immunoprophylaxis with antibody has been a successful approach but the expense of these products has restricted their use to the highest risk infants with prematurity, congenital heart disease, or chronic lung disease. The human immunoglobulin RespiGam has been replaced by the monoclonal antibody palivizumab (Synagis®). Synagis® must be given monthly by intramuscular injection, and indications for its use have been published.[1]

The Centers for Disease Control and Prevention has strongly encouraged the development of local and regional systems to alert clinicians to the onset and end of the RSV outbreak in their area. These systems have used either laboratory or hospitalization data. Across our region, three systems are currently active:

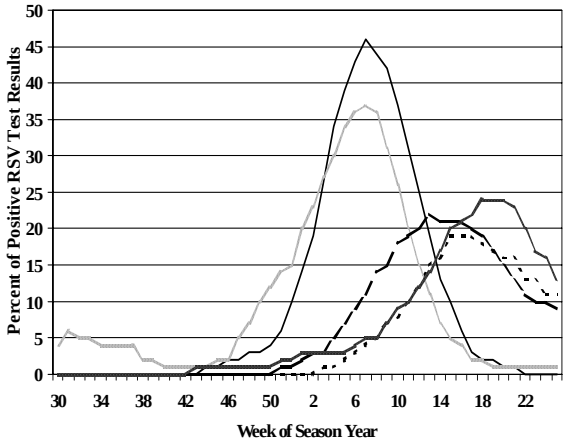
- Boise, Idaho: Graphs of data from the laboratory at St. Luke's Regional Medical Center are posted on the Idaho State Chapter website for the American Academy of Pediatrics www.idahoaap.org
- Spokane, Washington: Data from PAML laboratories are compiled by the hospital epidemiologist at Sacred Heart Hospital and emailed to interested providers.
- Salt Lake City, Utah: Graphs of data from the laboratory at Primary Children's Hospital are posted on University of Utah Pediatric Infectious Diseases website http://www.ped.med.utah.edu/GeneralInfo/InfDis_files/ID.htm

The timing of RSV outbreaks varies between different parts of the US, and within an individual site timing of outbreaks varies from year to year. RSV activity starts earlier in southern and coastal areas. Florida has a notoriously long RSV season because of both climate and frequent travel.

The northern interior of the US has the shortest RSV season. National data[2] indicate median duration of RSV activity is 15 weeks. Data from Boise from 2000–2005 indicate median duration of RSV

Activity is 11 weeks. During this period, onset of the season varied from December 28 to January 23 (median January 14), and end of the season varied from March 7 to April 10 (median April 1). Figure 1 illustrates the year-to-year variability of RSV season with data from a laboratory in Omaha, Nebraska, a site similar to Idaho in the epidemiology of RSV[2].

Anyone is welcome to visit the website www.idahoaap.org then proceed to the Infectious Diseases Monitoring page that includes graphs of influenza and RSV activity and recommendations. Efficient use of preventive measures and planning for hospitalizations will be promoted by epidemiologic data within our region.



--Thomas H. Rand, MD PhD

Figure 1. Example of year-to-year RSV season variability. Seven-week moving average of positive RSV antigen test results for selected RSV seasons (1991 through 1998, excluding the 1994-1995 season) from a laboratory in Omaha, Nebraska participating in the National Respiratory and Enteric Virus Surveillance System. The 1991/1992 season was the most severe season represented by the solid line. Reprinted with permission.[2] (See reference for more details).

References:

[1]American Academy of Pediatrics Policy Statement. 2003. Revised indications for the use of palivizumab and respiratory syncytial virus immune globulin intravenous for the prevention of respiratory syncytial virus infections. *Pediatrics* 112:1442-1452.

[2]Mullins, JA, et al. 2003. Substantial variability in community respiratory syncytial virus season timing. *Pediatric Infectious Diseases Journal* 22:857-862.

Seasonal and Pandemic Influenza Surveillance 2005–2006

Because sporadic, fatal infections with the H5N1 subtype of avian influenza have occurred in humans with poultry contact in Asia, concern is high that this H5N1 virus may become the influenza subtype to give rise to the next pandemic. As of November 2005, there has been no sustained human-to-human transmission of this H5N1 virus anywhere in the world and no recognized H5N1 virus, of the type found in Asia, anywhere in the United States; however, a novel strain of influenza could emerge at any time. Healthcare providers' participation in surveillance activities for seasonal influenza may help detect new strains or changes in disease patterns.

Seasonal influenza strain surveillance:

The first laboratory-confirmed case of influenza this season was collected the last week of October. The confirmed isolate was an influenza B. A handful of positive rapid influenza tests for influenza A also have been reported sporadically from several areas of the state during the first few weeks of November, but these have not been laboratory-confirmed. Although influenza infections are not reportable in Idaho, it is important to determine circulating virus strains. The Idaho Bureau of Laboratories (IBL) will test respiratory specimens, at no charge, from rapid-test positive individuals to determine which influenza strains are circulating in Idaho. Representative samples

should be collected throughout the influenza season, especially early and late in the season. IBL is also interested in obtaining samples from individuals with unusual clinical presentations or severe infections, and from those with influenza-like illness outside the normal influenza season. If you wish to receive free swab kits and shipping instructions, contact Colleen Greenwalt at the IBL, 208-334-2235 x 228.

Avian influenza surveillance: What if you suspect a human case of avian influenza?

The Department of Health and Human Services has recently published clinical and epidemiologic guidelines for healthcare providers who suspect they might be dealing with a case of avian influenza. A summary of this information is presented below. More details may be found at www.hhs.gov/pandemicflu/plan/. Additional information on seasonal influenza, pandemic influenza, and avian influenza may be found at www.healthandwelfare.idaho.gov.

The Office of Epidemiology and Food Protection (OEFP) recommends consider-ation of testing for a novel influenza virus only in patients who meet the following clinical and epidemiologic criteria:

- Clinical criteria: temperature >38° C and at least one of the following: sore throat, cough, or dyspnea;

  AND

- Epidemiologic criteria: These criteria are designed to focus on the likelihood of an exposure to a novel strain of influenza virus within 10 days of onset of illness. These include travel and occupational risk criteria:

Travel: Those individuals who recently traveled from or lived in an area currently experiencing outbreaks of highly pathogenic avian influenza in domestic poultry or where a human case was recently diagnosed, and either had direct contact with poultry while there or direct contact with a confirmed or suspected case of disease due to a novel influenza virus.

Occupational risks: Those working in the poultry industry or live bird markets or who process poultry suspected of having avian influenza, laboratory workers potentially exposed to a novel virus, or healthcare providers caring for an individual having or suspected of having a novel influenza infection.

If new developments in pandemic influenza occur, you will receive update information on case recognition and screening recommendations through the Idaho Health Alert Network (HAN).

Based on the above guidelines, if you suspect that you have a patient with avian influenza, please call your local public health district or the OEFP, IDHW, to discuss possible testing.

Free Bioterrorism Course (6.5 hours CME) Available on the Web

"Bioterrorism: What you need to know" is a new continuing medical education course for primary care physicians and other health-care professionals. The web-based course is being offered to Idaho physicians at no cost. Course objectives include identification of bioterrorism agents and symptoms, prevention, and initial management of exposed patients.

Visit www.ahecbt.org or contact Dana Ellis (danae@u.washington.edu) with the WWAMI (Idaho) Office for Clinical Medical Education at 208-327-0641 for more information. This activity has been reviewed and is acceptable for up to 6.5 Prescribed Credits by the American Academy of Family Physicians.

WNV Summary, 2005

As of November 1, 2005 there were 2581 reported human cases of WNV infection and 165 deaths nationwide. West Nile virus (WNV) activity in Idaho, during the summer of 2005, expanded from 11 affected counties in 2004 to 15 affected counties in 2005 (Ada,

Adams, Blaine, Canyon, Elmore, Gem, Gooding, Jefferson, Jerome, Lincoln, Owyhee, Payette, Twin Falls, Valley, Washington). There were 13 reports of ill persons for 2005 with no fatalities. The Idaho State Department of Agriculture reported 113 positive horses between July 19th and October 7th Additional surveillance findings included one (1) positive dog (Jerome County), 17 positive mosquito pools of *Culex tarsalis*, *Culex erythrothorax*, and *Culex pipiens* (Ada, Canyon, Gem, Payette, and Washington Counties), and 15 positive birds. WNV activity again predominated in the southwest and south central parts of the state.

The best defense continues to be education around mosquito bite avoidance, which was promoted during the 2005 season with the "Fight the Bite" campaign.

The Idaho WNV site can be found at www.westnile.idaho.gov

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